

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 1713

Examiner: Rip A. Lee

In re application of

Sandor Nagy et al.

Ser. No. 10/611,827

Filed: July 1, 2003

For: OLEFIN POLYMERIZATION PROCESS

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.131

We, **SANDOR NAGY** and **KAREN NEAL-HAWKINS**, declare and say:

- 1. We are co-inventors of claims 1-18 of the above-identified patent application (Appl. Ser. No. 10/611,827, filed July 1, 2003), hereinafter "the '827 application";
- 2. We have reviewed the application as filed in the United States Patent & Trademark Office (USPTO). In addition, we have reviewed the reference cited by the Examiner, U.S. Pat. Appl. Publ. No. 2003/0004052 (published January 2, 2003), along with its corresponding U.S. Pat. No. 6,759,361 (issued July 6, 2004).
- 3. Prior to January 2, 2003, we conceived and actually reduced to practice in the United States the invention claimed in claims 1-18 of the '827 application. As evidence of the completion of the invention, we attach Exhibits A1 and A2, separately executed copies of Invention Disclosure No. C02-248, which we submitted to Equistar Chemicals, LP. Each of the dates removed from the documents is prior to January 2, 2003. The disclosure demonstrates olefin polymerizations using an indenoindolyl organometallic complex, an activator, and an aluminum phosphate support. The demonstrated process has improved catalyst

activity and the polyolefin has lower density indicating improved comonomer incorporation.

4. We further declare that all statements made in this declaration of our own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine, imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that willful false statements may jeopardize the validity of the application or any patents that would issue from it.

Further, declarants saith not.

SANDOR NAGY, Ph.D.

Any 09, 2004

DATE

Courned from

KAREN WEAL-HAWKINS

DATE

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EXHIBIT A1

CONFIDENTIAL

INVENTION and IDEA DISCLOSURE

To be Completed by Patent Department Disclosure No.: C-02-248

Assigned to: Catalyors/JON/ Date Received:

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Inventions are new compositions, processes, and improvements thereof that relate to Equistar's current products or derivatives.

They are believed to be patentable by the submitter.

Ideas are anything that can add future value to Equistar. Here we want your ideas for new products, markets, business methods, radical or step-out opportunities, etc.

TITLE: Improved performance of STAR3B catalyst on alumophosphate supports

The purpose of this ID is to suggest aluminophosphates as promising supports for catalysts based on bridged Indeno-Indol complexes. The attached table indicates that catalysts prepared on this support (calcined at 250 or 600C) significantly improves the activity and efficiency of comonomer incorporation combined with a narrow MW distribution of the resulting resin (based on MFR and Er):

		I.
_	Table Relative performance of STAR3.B catalyst on different supports (slurry deposition)	ŀ
	(slurry deposition)	ŀ
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Catalyst: 0.01g (0.019 mmoles)/g support; AVZr=400 Conditions: 70C, 350 psi C2, 100ml C6, 30 min; TiBAI

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Calt Tamp: Support	Baschilly (gar (pupilin)	Reactivity Koris metalari		NIR	di Angl	Me*C	B	densety O/DI
2000 50757	469.0	662.9	1.63	96.93	250		4.33	0.9244
250°C ES757	491.3	694.5	1.3	52.92	200			
250°C ES757		662.7	1.81	46.46	250	108.3	2.95	0.9214
600°C ES757	488.3		1.23	53,90	250	107.1	3.29	0.9188
600°C 94B	569.0	707.8	1.23	33.00				
200° Mont K-10	334.3	283.5	4.05	40.72	250		2.07	0.9263
	404.4	320.2	4.37	23.55	250		1.4	0.9209
250°C Al oxide	383.1	303.3	2.63	20.15	250		0.88	0.9161
600°C Al oxide	303.1						<u> </u>	
	1072.2	1030.7	4.55	27.54	250	107.1	1.16	0.9146
250°C Al phosphate		1192.2	0.57	37.19	150			<u> </u>
250°C Al phosphate		1076.3	4.7	30.32	250	106.3	1.29	0.9128
600°C Al phosphate			1.09	28.53	180	1		
600°C Al phosphate	1166.D	1120.8	1 1119				Loca	tion/Pho

600°C Al phosphate 1166.0 1120.8	1,09 28.53 180		15/
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Read and understood by:	1 Olish A	Date:	

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INVENTION and IDEA DISCLOSURE

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To be Completed by Patent Department Disclosure No.: C-02-248 Assigned to: CertalyST/JON

Date Received:

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Inventions are new compositions, processes, and improvements thereof that relate to Equistar's current products or derivatives.

They are believed to be patentable by the submitter. Ideas are anything that can add future value to Equistar. Here we want your ideas for new products, markets, business methods, radical or step-out opportunities, etc.

TITLE: Improved performance of STAR3B catalyst on alumophosphate supports

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	100.0	662.9	1.63	96.93	250		4.33	0.5244
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600°C 948	569.0	707.8	1.23	53.90	250	107.1	- 5.25	
			105	40.72	250		2.07	0.9263
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	40000	1030.7	4.55	27.54	250	107.1	1.16	0.9146
250°C Al nhoenhate	1072.2	ועצעון ו	1 4-27	C1			1	

1192.2

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250°C Al phosphate

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600°C Al phosphata 1119.6 1076.3	4.7	30.32	250	106.3	1.2	0.5128		
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